ASSIGNMENT 3

Textbook Assignment: The Computer Display Set AN/UYQ-21(V), chapter 4, pages 4-1 through 4-26.

3-1. The AN/UYQ-21(V) display system's modular construction allows it to be easily adapted to the specific requirements of the user.

1. True
2. False

3-2. Which of the following types of data is NOT displayed by the AN/UYQ-21(V) display system?

1. Computer-generated tactical data
2. Sensor data
3. Television data
4. Computer status and control data

3-3. The central equipment group (CEG) can accommodate up to what number of equipment modules?

1. Three
2. Four
3. Five
4. Six

3-4. One CEG is capable of driving what number of TDS display consoles?

1. 8
2. 16
3. 24
4. 32

3-5. The central data buffer (CDB) provides which of the following functions?

1. Interface between the radar and the display groups
2. Interface between the computer and the display groups
3. Interface between the radar and the computer
4. Generation of symbol waveforms for display

3-6. A fully configured CDB can have what number of display multiplexer units?

1. One
2. Two
3. Three
4. Four

3-7. The computer interface unit (CIU) of the CDB performs which of the following data conversions?

1. Serial data to parallel data for use by the display group only
2. Parallel data to serial data for use by the display group only
3. Serial data from the display console to parallel data for use by the computer only
4. Parallel data into serial data for use by the display group and serial data from the display consoles to parallel data for use by the computer

3-8. The DMU is used for which of the following functions?

1. To buffer computer output data to the display consoles only
2. To buffer computer input data from the display consoles only
3. To buffer computer output data to the display consoles and computer input data from the display consoles
4. To provide timing and control signals to the display group

3-9. A DMU request is generated by which of the following functional areas?

1. CEG
2. CIU
3. DMU
4. Scanner control and clock generator

IN ANSWERING QUESTIONS 3-10 AND 3-11, REFER TO FIGURE 4-6 IN THE TEXT .

3-10. If all of the DATA SOURCE SELECT switches are in the AUTO position, which of following computers will be used for the data source?

1. Computer 1 only
2. Computer 2 only
3. Any system computer

3-11. If the DATA SOURCE SELECT switch for DISPLAY CHANNEL 1 is placed in the BACKUP position, what will be the data source for display channel 1?

1. Display channel 2
2. Display channel 3
3. Display channel 4

3-12. What number of SRACs can be contained in a single drawer of the CEG?

1. One
2. Two
3. Three
4. Four

3-13. Each SRAC provides the interface for what number of radars ?

1. One
2. Two
3. Three
4. Four

3-14. The synchro-to-digital converter function of the SRAC converts the synchro azimuth signal to which of the following values?

1. ΔX and ΔY pulse train
2. 12-bit digital value of the azimuth
3. Sine and cosine of the azimuth angle
4. Sign of ΔX/ sign of ΔY

3-15. The polar-to-Cartesian converter function produces which of the following signals?

1. ΔX and ΔY pulse trains only
2. Sign of ΔX/ sign of ΔY only
3. Range marks only
4. ΔX and ΔY pulse trains, sign of ΔX/ sign of ΔY, and range marks

3-16. The signs of ΔX and ΔY are developed from which of the following signals?

1. The sine of the azimuth data
2. The cosine of the azimuth data
3. The 2 MSBs of the azimuth data
4. The 2 LSBs of the azimuth data

3-17. The RPM switch of the SRAC control panel is used to control what rotation speed(s)?

1. The rotation speed of the ship's radar only
2. The rotation speed of the simulated sweep only
3. Both 1 and 2 above

3-18. The SDDS can receive inputs from what number of sensors?

1. 12
2. 18
3. 20
4. 24

3-19. Which of the following is not part of the TDS display console?

1. Computer display console
2. Large screen display
3. Basic display unit only
4. TV monitor

3-20. Which of the following is a function of the computer display area of the TDS display console?

1. To convert symbol, graphic, and-sensor data into coordinate data for display on the BDU only
2. To convert alphanumeric data into composite video for display on the TV monitor only
3. To convert symbol, graphic and sensor data for display on the BDU and convert alphanumeric data into composite video for display on the TV monitor
4. To display computer symbols and sweep and sensor video

3-21. The O-data receiver function controls all communications with the system computer.

1. True
2. False

3-22. The O-data receiver function performs which of the following functions?

1. Transfers data to the I-data transmitter function
2. Transfers data to the system memory
3. Encodes serial data received from the CDB
4. Decodes serial data received from the CDB

3-23. Which of the following is a function of the input/output (I/O) processor?

1. To control output data transfers with the system computer only
2. To transmit buffered I-data to the BDU
3. To receive I-data from the O-data receivers
4. To distribute O-data to the system memory only

3-24. Which of the following is NOT a function performed by the memory sort processor function?

1. Controlling the data buses
2. Sectioning the refresh memory
3. Updating trackball data
4. Clearing memory

3-25. How much RAM is contained is the system memory function?

1. 64K
2. 128K
3. 256K
4. 512K

QUESTIONS 3-26 THROUGH 3-39 PERTAIN TO FUNCTIONAL AREAS OF THE COMPUTER DISPLAY CONSOLE.

3-26. Which functional area converts processed refresh memory data into display data?

1. Memory sort processor
2. System memory
3. Graphics processor
4. Display generator

3-27. Which functional area commands the graphics processor function?

1. Memory sort processor
2. System memory
3. I/O processor
4. Display generator

3-28. Which functional area sends deflection, intensity, and timing signals to the BDU?

1. Memory sort processor
2. System memory
3. Graphics processor
4. Display generator

3-29. Which functional area converts the X and Y coordinates of the trackball to range and bearing data?

1. Display generator
2. Panel processor
3. Sweep and raster
4. Digital deflection

3-30. Which functional area generates the sensor and video select codes sent to the SDDS?

1. Display generator
2. Panel processor
3. Sweep and raster
4. Digital deflection

3-31. Which functional area generates analog deflection voltages for use by the BDU?

1. Display generator
2. Panel processor
3. Sweep and raster
4. Digital deflection

3-32. Which functional area can display symbols, circles, ellipses, and lines in four intensities and colors?

1. Display generator
2. Panel processor
3. Sweep and raster
4. Digital deflection

3-33. Which functional area receives display sweep signals from the SDDS?

1. Display generator
2. Panel processor
3. Sweep and raster
4. Digital deflection

3-34. Which functional area compiles graphics data and generates sweep and display control signals?

1. Display generator
2. Panel processor
3. Sweep and raster
4. Digital deflection

3-35. The modified monobit digilogs in the computer display console perform which of the following conversions?

1. Analog intensity voltages to digital signals
2. Analog deflection voltages to digital coordinate signals
3. Digital intensity signals to analog voltages
4. Digital coordinate signals to analog deflection voltages

3-36. Which functional area generates the power on reset signals?

1. Clock generator
2. TV monitor display generator
3. Computer controlled action entry panel (CCAEP)
4. I-data storage and control

3-37. Which functional area processes operator CCAEP actions into computer I-data?

1. Clock generator
2. TV monitor display generator
3. CCAEP
4. I-data storage and control

3-38. Which functional area converts I-data into serial form for transfer to the system computer via the CDB?

1. Clock generator
2. TV monitor display generator
3. CCAEP
4. I-data storage and control

3-39. Which functional area generates analog composite video used to display alphanumeric data on the digital data indicator?

1. Clock generator
2. TV monitor display generator
3. CCAEP
4. I-data storage and control

3-40. Which of the following built-in diagnostic checks are controlled by the technician?

1. Level I
2. Level II
3. Level III

3-41. Which of the built-in diagnostics checks the operation of the system clocks , memory timing, and the four processors?

1. Level I
2. Level II
3. Level III

3-42. What size CRT is used in the BDU?

1. 7-inch by 9-inch rectangle
2. n-inch by 13-inch rectangle
3. 10.5-inch diameter round
4. 18-inch diameter round

3-43. What method does the BDU use to generate symbols on the CRT?

1. Analog waveform
2. Raster scan composite video
3. Stroke
4. Raster scan RGB

3-44. Which functional area of the BDU is used to develop circles and ellipses?

1. Symbol generator
2. Conies
3. Circular sweep control
4. Power distribution

3-45. What is the maximum radius of a circle, in deflections, that can be display by the BDU?

1. 16
2. 256
3. 512
4. 1023

3-46. What source provides the analog deflection function of the BDU with major symbol position data for developing analog deflection voltages?

1. The CDB
2. The system computer
3. The SRAC
4. The computer display console

3-47. What intensity circuit ensures uniform display intensity?

1. Compensation
2. CRT unblinking
3. CRT blanking
4. Brightness

3-48. The TV monitor is displays what type of video?

1. 525 line, noninterlaced composite video
2. 525 line, interlaced composite video
3. 525 line, color video
4. 1050 line, color video

3-49. The display control console interfaces with the system computer through what, if any, device?

1. Television converter
2. Central data buffer
3. Radar azimuth converter
4. None; the DCC is connect directly to the system computer

3-50. What is the resolution of the DCC graphics monitor?

1. 525 line only
2. 1075 lines only
3. 525 or 1075 lines
4. 750 lines only

QUESTIONS 3-51 THROUGH 3-53 PERTAIN TO FUNCTIONAL AREAS OF THE DCC GRAPHICS MONITOR.

3-51. Which functional area develops the voltages necessary to drive the CRT cathode and the control grid?

1. Monitor interface
2. Monitor deflection
3. Video amplifier
4. Power distribution

3-52. Which functional area detects the scan rate of the incoming composite video signal?

1. Monitor interface
2. Monitor deflection
3. Video amplifier
4. Power distribution

3-53. Which functional area produces the voltages necessary to control the focus of the CRT beam?

1. Monitor interface
2. Monitor deflection
3. Video amplifier
4. Power distribution

3-54. The graphics terminal shelf of the DCC contains which of the following assemblies?

1. Keyboard only
2. Trackball only
3. Bullnose microprocessor only
4. All of the above

3-55. The projection plotting unit (PPU) can display which of the following resolutions?

1. 525 lines only
2. 729 lines only
3. 1075 lines only
4. All of the above

3-56. The PPU can display stroke video supplied from an 0J-451(V)2/UYQ-21 equipped with the display signal amplifier option.

1. True
2. False

3-57. The light output by the PPU'S CRT is used to project an image on which of the following surfaces?

1. A fiber-optic substrate
2. A viewing screen
3. A liquid-filled prism
4. A projection lens

3-58. The light emitted by liquid crystal light valve (LCLV) of the PPU is ___(a)___ in the areas that are exposed to light and ___(b)___ in areas unexposed.

1. (a) Unaltered
   (b) polarized
2. (a) Unaltered
   (b) diffused
3. (a) Polarized
   (b) diffused
4. (a) Polarized
   (b) unaltered

3-59. When a point of light hits the fiber-optic plate, the impedance of the photoconductor will ___(a)___ causing an ac voltage to be applied to the ___(b)___.

1. (a) Increase
   (b) dielectric mirror
2. (a) Increase
   (b) liquid crystal
3. (a) Decrease
   (b) dielectric mirror
4. (a) Decrease
   (b) liquid crystal

3-60. What is the voltage of the arc lamp ignition-pulse in the PPU?

1. 20 volts
2. 100 volts
3. 115 volts
4. 24,000 volts

3-61. The C-DITEG can drive how many graphic displays?

1. 6
2. 8
3. 14
4. 18

IN ANSWERING QUESTIONS 3-62 THROUGH 3-67, SELECT FROM THE FOLLOWING LIST THE FUNCTIONAL AREA OF THE C-DITEG PROCESSOR DRAWER THAT PERFORMS THE FUNCTION DESCRIBED IN THE QUESTION. NOT ALL ITEMS IN THE LIST ARE USED.

A. Input/output controller
B. Control synchronizer
C. System memory
D. Peripheral input/output
E. Formatter
F. Function generator
G. Tabular video generator

3-62. Generates composite video signals to display text data on the TV monitors.

1. D
2. E
3. F
4. G

3-63. Generates the system clocks.

1. A
2. B
3. C
4. D

3-64. Interrogates the display control consoles for switch actions.

1. B
2. C
3. D
4. E

3-65. Contains the firmware for the C-DITEG.

1. B
2. C
3. D
4. E

3-66. Generates formatted display data for display control consoles, large screen displays, and printer plotters.

1. B
2. C
3. D
4. E

3-67. Sends display data to the system memory.

1. A
2. B
3. C
4. D

3-68. Which functional area of the C-DITEG video drawer creates serial bit streams?

1. Timing synchronizer
2. Bit map memory and control function
3. Video multiplexer
4. Tactical video generator

3-69. Which functional area of the C-DITEG video drawer converts data streams into composite video?

1. Timing synchronizer
2. Bit map memory and control function
3. Video multiplexer
4. Tactical video generator

3-70. Which of the following video modes can be used with the large screen display?

1. 1024 pixels per line only
2. 1280 pixels per line only
3. Either 1 or 2 above
4. 1075 pixels per line

3-71. What equipment provides the circuitry display graphics data on a single DCC or PPU?

1. C-DITEG
2. DITEG
3. Dual TVSC
4. CAG

3-72. What equipment converts computer supplied alphanumeric data into low resolution composite video for display on a standard TV monitor.

1. C-DITEG
2. DITEG
3. Dual TVSC
4. CAG

3-73. What equipment mixes radar sweep and video data with graphics video to provide the DCC with a radar and tactical symbol display?

1. C-DITEG
2. DITEG
3. Dual TVSC
4. CAG

3-74. The CAG can drive up to how many standard TV monitors?

1. 4
2. 8
3. 16
4. 32

3-75. The tactical DITEG module combines the features of what two equipments to drive one DCC, one TV monitor, and one printer-plotter?

1. C-DITEG and TVSC
2. C-DITEG and CAG
3. CEG and TVSC
4. CEG and CAG